

Name \_\_\_\_\_ Student ID \_\_\_\_\_

Section day and time \_\_\_\_\_

### Midterm 1 - Economics 101 (Fall 2009)

You will have 45 minutes to complete this exam. There are 56 points. Version A.

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**Multiple Choice:** (16 points total, 2 points each) Choose the best answer and record in blanks below.

1\_\_\_\_\_ 2\_\_\_\_\_ 3\_\_\_\_\_ 4\_\_\_\_\_ 5\_\_\_\_\_ 6\_\_\_\_\_ 7\_\_\_\_\_ 8\_\_\_\_\_

- 1) Real GDP measures total
  - a) production
  - b) expenditure
  - c) income
  - d) all of the above
- 2) Which of the following produces a measure of inflation that tends to be overstated due to substitution bias?
  - a) nominal GDP
  - b) GDP deflator
  - c) consumer price index
  - d) GNP
- 3) If a California winery buys a machine from Italy made by an Italian company that bottles wine, which of the U.S. national income accounting categories does this enter?
  - a) GDP
  - b) investment
  - c) GNP
  - d) both b and c
- 4) Which of the following adjusts to make sure the overall goods market clears in the neoclassical model:
  - a) price of goods
  - b) real rental rate
  - c) real interest rate
  - d) real wage
- 5) If the country of Chad implements policies to reduce its population growth rate, the Solow model implies that which of the following will be higher (assume no technological progress)
  - a) steady state level of total GDP
  - b) steady state level of GDP per worker
  - c) steady state growth rate in total GDP
  - d) all of the above
- 6) If the U.S. has a rate of labor-augmenting technological progress of 2% per year ( $g=0.02$ ), the Solow model implies that in steady state the level of capital stock per person is growing at \_\_\_\_\_ per year, and the real rental rate on capital is growing at \_\_\_\_\_ per year:
  - a) 0%, 0%
  - b) 0%, 2%
  - c) 2%, 0%
  - d) 2%, 2%
- 7) Which of the following government policies could help lower frictional/search unemployment in the U.S.?
  - a) funding worker retraining programs
  - b) lowering the minimum wage
  - c) extending the number of weeks people can collect unemployment benefits
  - d) all of the above
- 8) Which of the following could help explain a high natural rate of unemployment in Europe?
  - a) generous unemployment insurance
  - b) wage rigidity
  - c) sectoral shifts due to new technology
  - d) all of the above

**Problem 1: Neoclassical Model** (20 points total)

Suppose the real side of the U.S. macroeconomy is characterized as follow:

Production:	$Y = 12 K^{1/3} L^{2/3}$	
Factor supplies:	$K = 1000$	$L = 1000$
Government:	$G = 2200$	$T = 2000$
Consumer behavior	$C = 1000 + 0.6(Y-T)$	
Investment behavior	$I = 3000 - 1000r$	

- a) (8 points) Compute the equilibrium levels of the following three variables, showing your work: gross domestic product, real interest rate, and real wage

Explain briefly in a sentence the equilibrium condition that characterizes equilibrium in the financial market of this economy.

- b) (6 points) Suppose that the government lowers the level of spending, G. What effect will this have on the variables listed below? Please write letter in blank. No computations necessary; no explanation required.
- |                        |          |          |               |                              |
|------------------------|----------|----------|---------------|------------------------------|
| ___ government saving  | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ national saving    | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ real interest rate | (a) rise | (b) fall | (c) no change | (d) insufficient information |

- |                    |          |          |               |                              |
|--------------------|----------|----------|---------------|------------------------------|
| ___ investment     | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ private saving | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ real wage      | (a) rise | (b) fall | (c) no change | (d) insufficient information |

- c) (6 points) Suppose now instead that there is a fall in the supply of labor due to a flu epidemic. (Assume G stays at its original level.) What effect will this have on the variables listed below? No computations necessary; no explanation required.

- |                        |          |          |               |                              |
|------------------------|----------|----------|---------------|------------------------------|
| ___ GDP                | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ national saving    | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ real interest rate | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ investment         | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ real wage          | (a) rise | (b) fall | (c) no change | (d) insufficient information |
| ___ real rental rate   | (a) rise | (b) fall | (c) no change | (d) insufficient information |

**Problem 3: Solow Growth Model:** (20 points total)

Suppose that a country has the following production function  $y = 2k^{1/2}$  (in per worker terms). Suppose also that the depreciation rate is 6 percent, and the population growth rate is 4 percent, with no technological progress. Suppose the current saving rate is 10%, but policy makers are trying to decide if they want to use incentives to increase the saving rate.

- a) (6 points) Compute the golden rule capital stock for this economy.
- b) (8 points) Compute the saving rate needed to achieve the golden rule steady state capital stock computed in part (a) above. Show your work. Compute the maximum level of consumption per person this economy can achieve as a steady state.

- c) (6 points) Explain in a few sentences the economic logic for why saving rates that are either higher or lower (explain both cases separately) than the one computed above would lower the level of consumption per person that can be sustained as a steady state.

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10/19/09